Cady Cheese LLC Draft Permit Fact Sheet

General Information

Permit Number:	WI-0053597-10-0
Permittee Name:	Cady Cheese LLC
Address:	126 HWY 128
City/State/Zip:	Wilson WI 54027
Discharge Location:	SE ¼ of SE ¼, Section 28, T28N-R15W Town of Cady, Wilson, WI
Receiving Water:	Lohn Creek and the groundwaters in the Eau Galle River watershed of the Lower Chippewa River Basin in St. Croix county
StreamFlow ($Q_{7,10}$):	0 cfs
Stream Classification:	Limited Aquatic Life, Non-Public Water Supply

Facility Description

Cady Cheese LLC is a cheese manufacturing plant located in Wilson, Wisconsin. The facility produces on average 65,000 pounds of cheese per day, six days a week. The waste streams at the facility consist of process wastewater, water softeners, reverse osmosis (RO) polished water, noncontact cooling water and boiler blowdown water. The facility has a 220,000 gallon underground concrete holding tank and a 20,000 gallon above ground steel holding tank for the waste which allows the facility to landspread their waste more efficiently and to avoid bad weather. The facility treats their whey permeate with a Reverse Osmosis (RO) Whey Permeate Removal Process system, a process RO Clean Water polisher system, and a wastewater treatment RO system for the removal of Nitrogen compounds from the RO Polisher permeate wastewater discharge. The resulting discharge from the wastewater treatment RO then discharges through Outfall 005 to the Lohn Creek. The permeate discharge from the RO Whey Permeate Removal Process goes into the two tanks mentioned above before being land applied through outfall 001. Significant monitoring and/or limits changes proposed in the upcoming permit term include technology-based effluent BOD and TSS mass limits and Acute and Chronic whole effluent toxicity (WET) tests for the RO wastewater discharge via Outfall 005.

Substantial Compliance Determination

Enforcement During Last Permit: No significant enforcement actions taken during the previous permit term. The facility has completed all previously required actions as part of the enforcement process.

After a desk top review of all permit compliance related documents such as discharge monitoring reports, CMARs, land app reports, compliance schedule items, and a site visit on May 11, 2021, this facility has been found to be in substantial compliance with their current permit.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)**
001	Liquid Waste/Land Application: 28.74 MG landspread (2020)	Representative samples shall be collected from a truckload of liquid waste prior to initiation of landspreading activities. Discharge is limited to process wastewater, noncontact cooling water and boiler blowdown water.
005	Reverse Osmosis Wastewater: 0 MGD (2021)	Representative effluent samples shall be collected after the reverse osmosis polisher prior to the discharge to Lohn Creek.
006	Non-Contact Cooling Water: 0.003 MGD (2021)	Representative samples of non-contact cooling water shall be collected after the starter tanks before the discharge to Lohn Creek. No additives are to be included in the discharge without prior approval from the Department.

1 Surface Water - Proposed Monitoring and Limitations

Sample Point Number: 005- AFTER REVERSE OSMOSIS POLISHER

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Calculated	
BOD5, Total	Daily Max	40 mg/L	Weekly	Grab	
BOD5, Total	Monthly Avg	20 mg/L	Weekly	Grab	
BOD5, Total	Daily Max	8.4 lbs/day	Weekly	Calculated	
BOD5, Total	Monthly Avg	3.7 lbs/day	Weekly	Calculated	
Suspended Solids, Total	Daily Max	40 mg/L	Weekly	Grab	
Suspended Solids, Total	Monthly Avg	20 mg/L	Weekly	Grab	
Suspended Solids, Total	Daily Max	10.5 lbs/day	Weekly	Calculated	
Suspended Solids, Total	Monthly Avg	4.6 lbs/day	Weekly	Calculated	
pH Field	Daily Max	9.0 su	3/Week	Grab	
pH Field	Daily Min	6.0 su	3/Week	Grab	
Dissolved Oxygen	Daily Min	4.0 mg/L	3/Week	Grab	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Temperature Maximum	Daily Max	86 deg F	3/Week	Multiple Grab	See Temperature subsection below.
Phosphorus, Total		mg/L	Monthly	Grab	
Chloride		mg/L	Monthly	Grab	
Solids, Total Dissolved		mg/L	Monthly	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Monthly	Grab	
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Nitrogen, Nitrite + Nitrate Total		mg/L	Monthly	Grab	
Nitrogen, Total	Monthly Avg	10 mg/L	Monthly	Calculated	
Acute WET		TUa	See Listed Qtr(s)	Grab	See WET subsection below.
Chronic WET		TUc	See Listed Qtr(s)	Grab	See WET subsection below.

Changes from Previous Permit

Technology-based BOD and TSS mass limits and 2 Acute and 3 Chronic whole effluent toxicity tests have been added. Sampling frequencies for BOD and TSS has changed from 2/Month to Weekly, and Total phosphorus, chloride, and total dissolved solids sampling frequencies have changed from 2/year to monthly.

Explanation of Limits and Monitoring Requirements

Water Quality Based Limits and WET Requirements and Disinfection (if applicable)

Limits were determined for Cady Cheese LLC's existing discharge to Lohn Creek using chs. NR 102, 105, 106, and 217 of the Wisconsin Administrative Code (where applicable). For more information on the limits see the November 2, 2021 memo from Benjamin Hartenbower to Angela Parkhurst titled "Water Quality-Based Effluent Limitations for the Cady Cheese (WI-0053597)".

Temperature

The daily maximum effluent temperature limitation shall be 86 °F for discharges to surface waters classified as Limited Aquatic Life according to s. NR 104.02(3)(b)1, Wis. Adm. Code, except for those classified as wastewater effluent channels and wetlands regulated under ch. NR 103 and described in s. NR 106.55(2), Wis. Adm. Code, which has a daily maximum effluent temperature limitation of 120 oF. The 86 °F limit applies to the diffuse surface water classification defined in s. NR 104.02(1)(b), Wis. Adm. Code. The current limits and monitoring are required to continue.

Phosphorus

The Guidance for Implementing Wisconsin's Phosphorus Water Quality Standards for Point Source Discharges (2020) suggests that during the interim, WQBELs should be based on the criteria and flow conditions for the next stream segment downstream (or downstream lake or reservoir, if appropriate), because ss. 217.12 and 217.13, Wis. Adm. Code, state that the Department must set WQBELs to protect downstream waters. The discharge location of the wastewater from Cady Cheese, LLC is classified as limited aquatic life because Lohn Creek can by classified hydraulically as diffuse surface water in the absence of a discharge as defined in s. NR 104.02(1)(b), Wis. Adm. Code. Due to stream bed seepage, the low volume intermittent flow of effluent does not impact downstream surface water resources. Therefore, no water-quality based phosphorus limits are required for inclusion in the permit. However sampling frequency has increased from 2/year to monthly to better characterize the effluent.

Ammonia

The discharge does not have reasonable potential for the discharge to exceed any of the calculated ammonia nitrogen limits. Therefore, ammonia nitrogen limits are not required during the reissued permit term. Monitoring is required to continue.

Total Nitrogen Monitoring (NO2+NO3, TKN and Total N)

The Department has included effluent monitoring for Total Nitrogen in the permit through the authority under §§ 283.55(1)(e), Wis. Stats., which allows the department to require the permittee to submit information necessary to identify the type and quantity of any pollutants discharged from the point source, and through s. NR 200.065(1)(h), Wis. Adm. Code, which allows for this monitoring to be collected during the permit term.

Nitrogen Series monitoring is required to continue, as well as the Total Nitrogen monthly average limit of 10 mg/L since the discharge is to stream bed seepage.

Categorical Limits

Per s. NR 240.06(4) Wis. Adm. Code, the total technology based discharge limits shall be the total of the amounts calculated from the BOD input in each of the final product subcategories and all of the other subcategories which for Cady Cheese LLC include intermediate fluid products, natural and process cheese, and condensed whey product lines as defined in S. NR 240.02, Wis. Adm. Code. For each production line, the most restrictive calculated set of technology based limits are used in the calculation of the final total discharge limits for BOD, TSS and pH, and are included in this permit issuance. BOD daily max of 8.4 lbs/day and monthly average of 3.7 lbs/day limits, as well as TSS daily max of 10.5 lbs/day and monthly average of 4.6 lbs/day mass limits are now included, however because pH limits are consistent with the current permit no changes were necessary. For more information on these limits see the November 2, 2021 memo from Benjamin Hartenbower to Angela Parkhurst titled "Technology-Based Effluent Limitations for the Cady Cheese (WI-0053597)".

Monitoring Frequencies

The effluent monitoring frequency for all parameters were considered. Monitoring frequencies are based on the size and type of the facility and are established to best characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Requirements in administrative code (NR 108, 205, 210 and 214 Wis. Adm. Code) and Section 283.55, Wis. Stats. were considered, where applicable, when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term.

The department has determined the frequency for pH, Dissolved Oxygen, and Total Nitrogen remain as is, since the permittee has not historically violated any requirement. Total phosphorus, chloride, and total dissolved solids frequencies have changed from 2/year to monthly to better characterize the effluent. BOD and TSS frequencies were changed from 2/Month to Weekly to meet the minimum monitoring requirements for the corresponding TBEL categorical limits for BOD and TSS that were added this permit term. These changes were made in part according to the Industrial effluent

limit guidelines are established for point source discharges from Dairy Products Processing Categories pursuant to chs. NR 220 and NR 240, Wis. Adm. Code and 40 CFR Part 405.

Sample Point Number: 006- NON-CONTACT COOLING WATER

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Monthly	Total Monthly	
Temperature Maximum	Daily Max	86 deg F	3/Week	Multiple Grab	See Temperature subsection below.
BOD5, Total		mg/L	2/Year	Grab	
pH Field	Daily Max	9.0 su	Monthly	Grab	
pH Field	Daily Min	6.0 su	Monthly	Grab	

Changes from Previous Permit

None

Explanation of Limits and Monitoring Requirements

Water Quality Based Limits and WET Requirements and Disinfection (if applicable)

Outfall 006 is comprised primarily of noncontact cooling water and no additives have been declared. This discharge does not have a history of WET failures and no toxic compounds are expected at levels of concern. Since there is believed to be a very low risk of toxicity, WET testing is not required during the reissued permit term. For more information on the limits see the November 2, 2021 memo from Benjamin Hartenbower to Angela Parkhurst titled "Water Quality-Based Effluent Limitations for the Cady Cheese (WI-0053597)".

Temperature

The daily maximum effluent temperature limitation shall be 86 °F for discharges to surface waters classified as Limited Aquatic Life according to s. NR 104.02(3)(b)1, Wis. Adm. Code, except for those classified as wastewater effluent channels and wetlands regulated under ch. NR 103 and described in s. NR 106.55(2), Wis. Adm. Code, which has a daily maximum effluent temperature limitation of 120 oF. The 86 °F limit applies to the diffuse surface water classification defined in s. NR 104.02(1)(b), Wis. Adm. Code. The current limits and monitoring continue from the last permit term.

Categorical Limits

None are required.

Monitoring Frequencies

The effluent monitoring frequency for all parameters were considered. Monitoring frequencies are based on the size and type of the facility and are established to best characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. The department has determined at this time that no changes in monitoring frequency are warranted based on the size and type of the facility.

2 Land Application - Sludge/By-Product Solids (industrial only)

Sample Point Number: 001- LAND APPLICATION- LIQUID WASTE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Chloride		mg/L	Monthly	Grab	

Changes from Previous Permit:

None

Explanation of Limits and Monitoring Requirements

Requirements for land application of industrial sludge are determined in accordance with Ch NR 214 Wis Adm Code.

3 Compliance Schedules

3.1 ANNUAL DISAPPEARING STREAM DATA COLLECTION

Required Action	Due Date
Disappearing Stream Annual Inspection: The permittee shall inspect the Lohn Creek waterway from the outfall 005 discharge point downstream to the point where the discharge seeps into the soil profile. The permittee shall document, on a map or aerial photo, the downstream extent of the flow as well as the existence of any sinkholes within the stream bed. The inspection shall be done at the end of the work day no later than November 15 and under non-runoff event conditions.	11/15/2022
Disappearing Stream Annual Report #1: Submit report.	12/31/2022
Disappearing Stream Annual Inspection: The permittee shall inspect the Lohn Creek waterway from the outfall 005 discharge point downstream to the point where the discharge seeps into the soil profile. The permittee shall document, on a map or aerial photo, the downstream extent of the flow as well as the existence of any sinkholes within the stream bed. The inspection shall be done at the end of the work day no later than November 15 and under non-runoff event conditions.	11/15/2023
Disappearing Stream Annual Report #2: Submit Report	12/31/2023
Disappearing Stream Annual Inspection: The permittee shall inspect the Lohn Creek waterway from the outfall 005 discharge point downstream to the point where the discharge seeps into the soil	11/15/2024

profile. The permittee shall document, on a map or aerial photo, the downstream extent of the flow as well as the existence of any sinkholes within the stream bed. The inspection shall be done at the end of the work day no later than November 15 and under non-runoff event conditions.	
Disappearing Stream Annual Report #3: Submit report.	12/31/2023
Disappearing Stream Annual Inspection: The permittee shall inspect the Lohn Creek waterway from the outfall 005 discharge point downstream to the point where the discharge seeps into the soil profile. The permittee shall document, on a map or aerial photo, the downstream extent of the flow as well as the existence of any sinkholes within the stream bed. The inspection shall be done at the end of the work day no later than November 15 and under non-runoff event conditions.	11/15/2024
Disappearing Stream Annual Report #4: Submit report.	12/31/2024
Disappearing Stream Annual Inspection: The permittee shall inspect the Lohn Creek waterway from the outfall 005 discharge point downstream to the point where the discharge seeps into the soil profile. The permittee shall document, on a map or aerial photo, the downstream extent of the flow as well as the existence of any sinkholes within the stream bed. The inspection shall be done at the end of the work day no later than November 15 and under non-runoff event conditions.	11/15/2025
Disappearing Stream Annual Report #5: Submit report.	12/31/2025
Disappearing Stream Annual Inspection: The permittee shall inspect the Lohn Creek waterway from the outfall 005 discharge point downstream to the point where the discharge seeps into the soil profile. The permittee shall document, on a map or aerial photo, the downstream extent of the flow as well as the existence of any sinkholes within the stream bed. The inspection shall be done at the end of the work day no later than November 15 and under non-runoff event conditions.	11/15/2026
Disappearing Stream Annual Report #6: Submit report.	12/31/2026

Explanation of Compliance Schedules

The classification of the headwaters of Lohn Creek is a diffuse surface water. The annual waterway inspections and reports are to document that receiving water is discharging to a disappearing stream.

Special Reporting Requirements

None

Other Comments:

Additives: According to the permittee's WPDES permit application, the facility adds one water quality conditioner to their water that they discharge at Outfall 005 and no additives to Outfall 006.

Publishing Paper for Public Notice: The Hudson Star-Observer, PO Box 147, Hudson, WI 54016-0147

Fact Check Comments: Production days corrected to 6 days a week from 5 days a week in the facility description.

Attachments:

Water Quality Based Effluent Limits: November 2, 2021 memo from Benjamin Hartenbower to Angela Parkhurst titled "Water Quality-Based Effluent Limitations for the Cady Cheese (WI-0053597)" in SWAMP.

Technology Based Effluent Limits: November 2, 2021 memo from Benjamin Hartenbower to Angela Parkhurst titled "Technology-Based Effluent Limitations for the Cady Cheese (WI-0053597)" in SWAMP

Proposed Expiration Date:

March 31, 2027

Justification Of Any Waivers From Permit Application Requirements

N/A

Prepared By:

Angela Parkhurst Wastewater Specialist

Date: January 20, 2022

cc: **SWAMP**